REMARKS/ARGUMENTS

STATUS OF CLAIMS

Prior to the filing of this response, claims 1-15 and 17-42 were pending in the application. By this amendment, claims 1, 15, and 29 are amended, leaving claims 2-14, 17-28, and 30-42 unchanged. Claim 16 was canceled in an earlier Amendment, and claims 5, 7, 10, 14, 19, 21, 24, 28, 33, 35, 38, and 42 were withdrawn in a previous Amendment.

CLAIM REJECTIONS – 35 U.S.C. §102

On page 2 of the Office Action, claims 1, 8, 9, 12, 29, 36, 37, and 40 are rejected under 35 U.S.C. §102(b) as being anticipated by Tajima et al. (U.S. Patent No. 5,464,056).

Independent Claims

Claim 1 is hereby amended, and calls for:

> A stacked plate heat exchanger for transferring heat between at least a first fluid and a second fluid, the heat exchanger comprising:
>
> a plurality of stacked plates having substantially the same cross-sectional shape taken along a plane crossing each of the plurality of stacked plates, and comprising:
>
> a first end plate having at least one fluid connector integral with the first end plate, the connector having a first cross sectional plane located at a first port of the connector and a second cross sectional plane located at a second port of the connector, the first and second planes forming an acute angle relative to each other;
>
> a second end plate located opposite the first end plate;
>
> at least one intermediate plate sandwiched between the end plates to provide a surface area for transferring heat between the first and second fluids; and
>
> a fluid line attached to the connector at the second port to direct one of the first and second fluids between the connector and a component other than the connector.
>
> (Amendment marks not shown)

Claim 29 is hereby amended, and calls for:

> A stacked plate heat exchanger for transferring heat between at least a first fluid and a second fluid, the heat exchanger comprising:
> a plurality of stacked plates having substantially the same cross-sectional shape taken along a plane crossing each of the plurality of stacked plates, and comprising:
> a first end plate having at least one fluid connector integral with the first end plate, the connector having a first cross sectional plane located at a first port of the connector and a second cross sectional plane located at a second port of the connector, the first and second planes forming an acute angle relative to each other;
> a second end plate located opposite the first end plate;
> a stack of intermediate plates sandwiched between the end plates to provide surface areas for transferring heat between the first and second fluids;
> a plurality of fluid manifolds in said intermediate plates to direct the first and second fluids to said surface areas; and
> a fluid line attached to the connector at the second port to direct one of the first and second fluids between the heat exchanger and a component other than the heat exchanger.
> (Amendment marks not shown)

In contrast, Tajima et al. disclose a housingless type oil cooler including a core portion 1 formed of first and second plates 3, 5 with a lower plate 101 and an upper plate 103 disposed in lower and upper portions of the core portion 1, respectively, wherein an upper tank 111 opened in its lower side so as to be shaped like a donut is mounted on the core portion 1, and includes mount holes 111B formed in the tank walls for connection to water inflow and outflow pipes 131, 133. (Tajima et al.; col. 10, lines 38-67). Tajima et al. fail to disclose, teach, or suggest, among other things, a stacked plate heat exchanger having a plurality of stacked plates with substantially the same cross-sectional shape taken along a plane crossing each of the plurality of stacked plates, as claimed in amended claims 1 and 29. Further, Tajima et al. fail to disclose, teach, or suggest, among other things, a stacked plate heat exchanger having a first end plate with at least one fluid connector integral with the first end plate, wherein the connector has a first cross sectional plane located at a first port of the connector and a second cross sectional plane located at a second port of the connector, and wherein the first and second planes form an acute angle relative to each other, as claimed in amended claims 1 and 29.

In light of the above comments, and for other reasons not discussed herein, withdrawal of the 35 U.S.C. §102(b) rejection of claims 1 and 29 in view of Tajima et al. is respectfully requested.

Dependent Claims

Claims 8, 9, and 12 depend from amended claim 1, and are allowable based on independent claim 1 and upon other features and elements claimed in claims 8, 9, and 12 but not discussed herein. Claims 36, 37, and 40 depend from amended claim 29, and are allowable based upon independent claim 29 and upon other features and elements claimed in claims 36, 37, and 40 but not discussed herein. Withdrawal of the 35 U.S.C. §102(b) rejection of claims 8, 9, 12, 36, 37, and 40 in view of Tajima et al. is therefore respectfully requested.

CLAIM REJECTIONS – 35 U.S.C. §103

On pages 3 and 4 of the Office Action, claims 1-4, 6, 8, 9, 12, 15-18, 20, 23, 29-32, 34, 36, 37, and 40 are rejected under 35 U.S.C. §103(a) as being unpatentable over Armes (U.S. Patent No. 3,240,268) in view of Ostbo (U.S. Patent No. 3,865,185).

Independent Claim

Claims 1 and 29 are hereby amended as presented above.

Claim 15 is also hereby amended, and calls for:

> A stacked plate heat exchanger for transferring heat between a first fluid and a second fluid, the heat exchanger comprising:
> a plurality of stacked plates having substantially the same cross-sectional shape taken along a plane crossing each of the plurality of stacked plates, and comprising:
> a first end plate having at least one fluid connector integral with the first end plate, the connector having a first cross sectional plane located at a first port of the connector and a second cross sectional plane located at a second port of the connector, the first and second planes forming an acute angle relative to each other;
> a second end plate located opposite the first end plate;
> at least one intermediate plate sandwiched between the end plates to provide a surface area for transferring heat between the first and second fluid; and
> a fluid line attached to the connector at the second port located at least partially above and extending over the first end plate to direct one of the first and second fluids between the connector and a component other than the connector.
> (Amendment marks not shown)

In contrast, Armes discloses a heat exchanger comprising a stack of thin plates 10 at each end, which include thin plates 16, 18, and heavy plates 12, 14, wherein each heavy end plate 12, 14 is provided with two openings 42, 44, 46, 50, each of which is fitted with an inlet or outlet conduit 42', 44', 46', 50' extending perpendicularly from the plate. In the Office Action, the Examiner has identified thin plates 16 and 18 of Armes as embodying the first and second end plates in claims 1, 25, and 29. According to this correspondence of elements, Armes fails to disclose, teach, or suggest, among other things, a stacked plate heat exchanger having a plurality of stacked plates having substantially the same cross-sectional shape taken along a plane crossing each of the plurality of stacked plates (see the different shapes of plates 16, 18, and 20), a first end plate having at least one fluid connector *integral* with the first end plate, or the connector having a first cross sectional plane located at a first port of the connector and a second cross

sectional plane located at a second port of the connector, the first and second planes forming an acute angle relative to each other, as claimed in amended claims 1, 15, and 29.

Ostbo fails to cure the deficiencies of Armes, and is cited only for the purpose of disclosing an inlet and outlet having an acute angle formed between two cross-sectional planes of a connector. However, the inlet and outlet 6 and 7 of Ostbo are provided in the end walls 5, 4 of a shell surrounding circular metal discs 8. As clearly illustrated in Fig. 1 of Ostbo, the cross-sectional shape of the walls 4, 5 is significantly different from that of the metal discs 8. Thus, neither Armes, nor Ostbo, nor any combination of the two disclose, teach, or suggest, among other things, a stacked plate heat exchanger having a plurality of stacked plates with substantially the same cross-sectional shape taken along a plane crossing each of the plurality of stacked plates, a first end plate having at least one fluid connector integral with the first end plate, or a connector having a first cross sectional plane located at a first port of the connector and a second cross sectional plane located at a second port of the connector, wherein the first and second planes form an acute angle relative to each other, as claimed in amended claims 1, 15, and 29.

In light of the above comments and for other reasons not discussed herein, withdrawal of the 35 U.S.C. §103(a) rejection of claims 1, 15, and 29 over Armes in view of Ostbo is respectfully requested.

Dependent Claims

Claims 2-4, 6, 8, 9, and 12 depend from amended claim 1, and are allowable based on independent claim 1 and upon other features and elements claimed in claims 2-4, 6, 8, 9, and 12 but not discussed herein. Claims 16-18, 20, and 23 depend from amended claim 15, and are allowable based upon independent claim 15 and upon other features and elements claimed in claims 16-18, 20, and 23 but not discussed herein. Claims 30-32, 34, 36, 37, and 40 depend from amended claim 29, and are allowable based upon independent claim 29 and upon other features and elements claimed in claims 30-32, 34, 36, 37, and 40 but not discussed herein. Withdrawal of the 35 U.S.C. §103(a) rejection of claims 2-4, 6, 8, 9, 12, 16-18, 20, 23, 30-32, 34, 36, 37, and 40 over Armes in view of Ostbo is therefore respectfully requested.

On pages 3-5 of the Office Action, claims 11, 13, 25, 27, 39, and 41 are rejected under 35 U.S.C. §103(a) as being unpatentable over Armes (U.S. Patent No. 3,240,268) in view of Ostbo (U.S. Patent No. 3,865,185) and further in view of Wright (U.S. Patent No. 3,690,373). Claims 11, claims 13, 25, and 27, and claims 39 and 41 depend from amended claims 1, 15, and 29, respectively, and are allowable based upon amended claims 1, 15, and 29 and upon other features and elements claimed in claims 11, 13, 25, 27, 39, and 41 but not discussed herein. Withdrawal of the 35 U.S.C. §103(a) rejection of claims 11, 13, 25, 27, 39, and 41 over Armes in view of Ostbo and Wright is therefore respectfully requested.

CONCLUSION

In view of the foregoing, it is respectfully submitted that claims 1-15 and 17-42 of the present application are in condition for allowance. The Applicant requests that the Examiner telephone the attorneys of record in the event a telephone discussion would be helpful in advancing the prosecution of the present application.

Respectfully submitted,

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